REMARKS/ARGUMENTS

I. Introduction:

Claim 17 is amended herein. Claims 1-30 are currently pending.

Applicants' undersigned attorney requests an interview with the Examiner after the Examiner has had an opportunity to review the remarks/arguments submitted herein.

II. Claim Rejections - 35 U.S.C. 112:

Claim 17 is dependent on claim 1 and specifies that the hierarchical traffic management system is located within a network device comprising two or more of the traffic management nodes. As described, for example, at page 7, lines 8 - page 8, line 2 of the specification and illustrated in Fig. 2, a traffic management node (TMN) exists at any point along a platform data path where there is a need to manage traffic. Thus, a network device may have multiple TMN structures in its data path. Fig. 2 illustrates traffic management nodes 20 installed within a network device 12 at ingress and egress ports 24, 26 and prior to the switch fabric 21.

Accordingly, the claim rejection under 35 U.S.C. 112 should be withdrawn.

III. Claim Rejections - 35 U.S.C. 101:

The specification has been amended to remove reference to a carrier wave. Claim 29 is therefore believed to comply with the requirements of 35 U.S. 101.

IV. Claim Rejections - 35 U.S.C. 103:

Claims 1-10, 12-13, 15-17, 19 and 21-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,020,143 (Zdan) in view of U.S. Patent Application Publication No. 2007/0050495 (Sridhar).

Claim 1 is directed to a hierarchical traffic management system comprising at least one traffic management node. The node includes a classifier and a queuing system. The queuing system comprises a plurality of queues and is operable to apply scheduling policies to traffic streams. The queues each comprise enqueue attributes configured to control a depth of the queue and dequeue attributes configured to control scheduling of the queue. Each layer of the queue hierarchy is configured to support one or more priority queues and comprises one or more queues configured for a minimum bandwidth attribute and one or more queues configured for an excess bandwidth attribute. A first queue comprises a propagated attribute that propagates through the hierarchy from the first queue to a root queue, wherein the propagated attribute applies to the first queue and parent queues of the first queue with respect to traffic associated with the first queue.

The Zdan patent is directed to a system and method for differentiated queuing in a routing system. The method includes allocating a message block header used to queue and route a packet to a differentiated services network domain in a manner that ensures a specific QoS.

Zdan does not disclose a queue hierarchy comprising layers each configured to support one or more priority queues and comprising one or more queues configured for a minimum bandwidth attribute and queues configured for excess bandwidth. As shown in Fig. 5. the queuing block includes a queuing manager, a plurality of queues including an expedited forwarding queue, assured forwarding queue, and a best effort queue. The queuing manager selects a queue based on how the packet is marked. The queuing block also includes three egress queues, each having a different priority. In

contrast to applicants' claimed queue hierarchy, Zdan simply discloses a queue manager, a plurality of queues selected based on type of services specified in packet, and prioritized egress queues. Zdan does not disclose layers of a queuing hierarchy, with each layer of a queue hierarchy having queues configured as specifically set forth in the claims.

As noted by the Examiner, Zdan also does not disclose wherein a first of a plurality of queues comprises a propagated attribute that propagates through a hierarchy from a first queue to a root queue or a propagated attribute that applies to a first queue and parent queues of the first queue with respect to traffic associated with the first queue.

Sridhar et al. disclose a distributed Quality-of-Service system. The system makes use of a distributed architecture to achieve high throughput and availability in which a number of separate processors are loosely coupled in a communication network.

As shown in Fig. 4A of Sridhar et al., scheduler 240 maintains an array 430 which has one column per priority and one row per depth of borrowing. If a class has exceeded its allocated rate, but not its maximum rate, the class may borrow rate from its parent. Each node can transmit within its allocated rate and all nodes within a branch can transmit within their maximum rates. Thus, each node has its own allocated rate and maximum rate. A node may borrow rate if it exceeds its own allocated rate but not its own maximum rate. When a new packet for a class arrives at scheduler 240, the scheduler can add it to the array as described at paragraph [0063]. After a packet is transmitted for a class, if that transmission empties the queue for that class, it is removed from any entries in the array in which it is identified. The next time for transmission for that class, as well as classes up the class hierarchy are updated by incrementing by the packet size divided by the allocated rate for that particular class in the tree. Each node has its own attributes (e.g., priority, allocated rate, maximum rate).

Sridhar et al. do not show or suggest a plurality of queues comprising a propagated attribute that propagates through a hierarchy, wherein the propagated attribute applies to the first queue and parent queues with respect to traffic associated with the first queue. In contrast to applicants' claimed invention, Sridhar et al. simply describe an array that is used in borrowing excess rate from a parent. This does not change the specified maximum rate or any other attribute at the node. In rejecting the claims, the Examiner refers to paragraph [0064] which describes how transmission times are updated for a class after a packet is transmitted. There is no attribute that is propagated through a hierarchy and applies to a first queue and parent queues of the first queue with respect to traffic associated with the first queue, as recited in the claims.

Applicants' claimed invention is particularly advantageous in that it introduces novel propagation attributes that can be propagated through a queue hierarchy. Applicants' claimed propagation attributes allow for specific behaviors to be delivered through the hierarchy from leaf to root. As further specified in the dependent claims, the attribute may be, for example, priority propagation which allows low latency behavior to be delivered through the hierarchy or minimum rate propagation which allows child nodes to be configured with a minimum rate, even though the parent node does not have an equal or greater minimum rate.

Accordingly, claim 1 as amended, is submitted as patentable over Zdan and Sridhar .

Claims 2-20, depending either directly or indirectly from claim 1 are submitted as patentable for at least the same reasons as claim 1.

Claims 21, 29, and 30 are submitted as patentable for at least the reasons set forth above with respect to claim 1. Claims 22-28, depending either directly or indirectly from claim 21, are submitted as patentable for at least the same reasons as claim 21.

Claims 15 and 16 are further submitted as patentable over the cited references which do not teach a minimum-rate propagation attribute or a priority propagation attribute. As previously discussed, Sridhar et al. fail to show or suggest a propagated attribute.

Claims 23-27 are directed to further details of the propagated attribute and are further submitted as patentable over the cited references which do not show or suggest a propagated attribute or details of the propagated attribute as set forth in the dependent claims.

Claim 23 specifies that the propagated attribute comprises a priority propagation attribute which specifies whether or not priority service at a queue is propagated through a hierarchy of the queue. The Examiner cites col. 8, lines 25-67 of Zdan. This section of the patent describes queues located at a single hierarchy level and how the queues are token bucket metered. There is no disclosure of an attribute which specifies whether or not priority service at a queue is propagated through a hierarchy of the queue.

With regard to claims 24, 25, and 26, Zdan does not show or suggest a burst tolerance parameter associated with a stream enabled with priority propagation. As previously discussed, Zdan do not teach priority propagation. Furthermore, the Examiner has failed to point to any teaching of a burst tolerance parameter associated with a stream. Claim 26 further specifies that the burst tolerance parameter indicates how much a stream is permitted to burst beyond a rate constraint of an ancestral node before the stream becomes constrained by the rate. Zdan simply notes that packets exceeding a configured rate can be forwarded if there are available resources. There is no teaching of parameters that indicate how much a stream is permitted to burst beyond a rate constraint.

Claims 11 and 28 are further submitted as patentable over Zdan which does not teach an oversubscription mode. In rejecting the claims, the Examiner refers to col. 6, lines 8-10 which describes how packets exceeding a configured rate may be forwarded

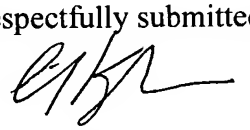
if there are available resources. There is no teaching of reducing oversubscribed streams in proportion to a specified oversubscription minimum rate.

Claim 18 is further submitted as patentable over U.S. Patent Application Publication No. 2005/0091642 (Miller) which does not teach a user interface configured for use with a platform independent common configuration language. Miller describes an object oriented model defined using a unified modeling language.

The other references cited including U.S. Patent Nos. 6,940,864 (Abdelilah et al.) and 6,721,796 (Wong), and U.S. Patent Application Publication No. 2005/0094643 (Wang et al.), do not overcome the deficiencies of the primary reference.

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,



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